PI MU EPSILON JOURNAL

THE OFFICIAL PUBLICATION OF
THE HONORARY MATHEMATICAL FRATERNITY

INDEX TO VOLUME III

FALL, 1959 -- SPRING, 1964

CONTENTS

page

Authors II

Titles III

Book Reviews IV

National Fraternity Affairs VII

Problems VIII

AUTHORS

ABBOTT, J. C., Undergraduate research in mathematics at the naval academy . . 453
ALLEN, John E., Filters and untrafilters 177
ANDERSEN, Sigurd L., Mathematics in the chemical industry 87
ANDREE, Richard V., Computers and today's mathematics 57

BLUMENTHAL, Leonard M., Plane geometry without postulates 101
BUCK, Robert J., An equivalent definition of vector product and topological considerations 519
CAIRNS, Stewart S., Networks, ham sandwiches and putty 389
CARROLL, Joel, An iterative scheme for finding a certain point on an ellipse 226
CATER, S., Defining the characteristic polynomial without determinants . . . 516
COLLIER, James, On the construction of sequences 224

DEFINE, J. Donald, ACIC and its aerospace mission 361
DENOYA, Louis E., Conformally elementary points 329
DOUTHAT, Dean I., Definition of a topology by means of a separation relation 12
DUDLEY, Underwood, Crossword puzzle 229

FRAME, J. S., Fifty years in the pi mu epsilon fraternity 511

GALLAGER, Monica, Numerical studies on waring's problem 214
GERELL, G. W., Mathematics in the electric utility industry 198
GIRARD, Edward W., The combat soldier needs your help 252

HAMMER, Preston C.. The role and nature of mathematics 501
HARRIS, T. E., Mathematical training and operations research 250
HARRIS, V. C., A role for complex numbers in analytic geometry 64
HEROD, James V., The construction of the affine plane and its associated group in terms of the barycentric calculus 169
HEYDEN, Francis J., Space age astronomers 440
HOHN, Franz E., Relations as models of physical systems 1
HOWLETT, Fred, Konigsberg bridge problem 218

IRWIN, John B., Astronomy and the space age 436

JOHNSON, Montgomery H., Science and industry 83

KEENAN, Philip C., Mathematical problems in modern astronomy 438
KENNEDY, Hubert C., An appreciation of giuseppe peano 107
KING, Edgar P., Mathematical applications in the design of experiments . . . 84

LAYZER, David, The role of mathematics in astronomy 434
LEUTERT, W. W., Mathematicians in the computer industry 313
LEVY, Harry, When lines are points 325
LOMONACO, S. J., Numerical studies on waring's problem 214

MACKEY, Michael C., On the division of one polynomial by another 114
MALONE, Joseph J. Jr., Sylow theory 404
MAMANGAKIS, Stanley E., On the number of representations by cubic polynomials 288
MATHEMATICAL Association of America, Mathematics today and tomorrow 201
MICHEL, J. R., The absolute value of a matrix 459

PHELPS, C. Russell, Teaching as a career 138
POLACHEK, Harry, Mathematics in the navy 248

ROSEN, J. B., Recent developments in applies mathematics 31
ROSENHAUPT, Hans, College teachers for tomorrow 143
ROSSKOPF, Myron F., Mathematics: its place in teacher training 141

SAATY, Thomas L., Operations research orientation and training 244
SHOOK, T. W., General solution to the linear diophantine equation 335
STORY, Mattison L., Mathematics and national purpose 359

TORDELLA, L. W., Unique research role for mathematicians 477
TRASHER, Virginia S., A geometric interpretation of the solution of 3x3 games 281

VOLKMAN, T. R., Numerical studies on waring's problem 214

WILANSKY, Albert, Some paradoxes in plane geometry 292

TITLES

ABSOLUTE VALUE OF A MATRIX, The, J. R. Michel 459
ACIC AND ITS AEROSPACE MISSION, J. Donald Define 361
APPRECIATION OF GIUSEPPE PEANO, An, Hubert C. Kennedy 107
ASTRONOMY AND THE SPACE AGE, John B. Irwin 436

COLLEGE TEACHERS FOR TOMORROW, Hans Rosenhaupt 143
COMBAT SOLDIER NEEDS YOUR HELP, The, Edward W. Girard 252
COMPUTERS AND TODAY'S MATHEMATICS, Richard V. Andree 57
CONFORMALLY ELEMENTARY POINTS, Louis E. DeNoya 329
CONSTRUCTION OF THE AFFINE PLANE AND ITS ASSOCIATED GROUP IN TERMS OF THE BARYCENTRIC CALCULUS, The, James V. Herod 169
CROSSWORD PUZZLE, Underwood Dudley 229

DEFINING THE CHARACTERISTIC POLYNOMIAL WITHOUT DETERMINANTS, S. Cater 516
DEFINITION OF A TOPOLOGY BY MEANS OF A SEPARATION RELATION, Dean E. Douthat . 12

EQUIVALENT DEFINITION OF VECTOR PRODUCT AND TOPOLOGICAL CONSIDERATIONS, An Robert J. Buck 519

FIFTY YEARS IN THE PI MU EPSILON FRATERNITY, J. S. Frame 511
FILTERS AND UNTRAFILTERS, John E. Allen 177

GENERAL SOLUTION TO THE LINEAR DIOPHANTINE EQUATION IN TWO VARIABLES, T. W. Shook 335
GEOMETRIC INTERPRETATION OF THE SOLUTIONS OF 3x3 RECTANGULAR GAMES, A Virginia S. Trasher 281

ITERATIVE SCHEME FOR FINDING A CERTAIN POINT ON AN ELLIPSE, An, Joel Carroll 226

KONIGSBERG BRIDGE PROBLEM, Fred Howlett 218

MATHEMATICAL APPLICATIONS IN THE DESIGN OF EXPERIMENTS, Edgar P. King 84
MATHEMATICAL PROBLEMS IN MODERN ASTRONOMY, Philip C. Keenan 438
MATHEMATICAL TRAINING AND OPERATIONS RESEARCH, T. E. Harris 250
MATHEMATICIANS IN THE COMPUTER INDUSTRY, W. W. Leutert 313
MATHEMATICS AND NATIONAL PURPOSE, Mattison L. Story 359
MATHEMATICS IN THE CHEMICAL INDUSTRY, Sigurd L. Andersen 87
MATHEMATICS IN THE ELECTRIC UTILITY INDUSTRY, G. W. Gerell 198
MATHEMATICS IN THE NAVY, Harry Polachek 248
MATHEMATICS: ITS PLACE IN TEACHER TRAINING, Myron F. Rosskopf 141
MATHEMATICS TODAY AND TOMORROW, Mathematical Association of America 201

NETWORKS, HAM SANDWICHES AND PUTTY, Stewart S. Cairns 389
NUMERICAL STUDIES ON WARING'S PROBLEM, Monica Gallager 214

ON THE CONSTRUCTION OF SEQUENCES, James Collier 224
ON THE DIVISION OF ONE POLYNOMIAL BY ANOTHER, Michael C. Mackey 114
ON THE NUMBER OF REPRESENTATIONS BY CUBIC POLYNOMIALS MODULO P, Stanley E. Mamangakis 288
OPERATIONS RESEARCH ORIENTATION AND TRAINING, Thomas L. Saaty 244

PLANE GEOMETRY WITHOUT POSTULATES, Leonard M. Blumenthal 101

RECENT DEVELOPMENTS IN APPLIED MATHEMATICS, J. B. Rosen 31
RELATIONS AS MODELS OF PHYSICAL SYSTEMS, Franz E. Hohn 1
ROLE AND NATURE OF MATHEMATICS, The, Preston C. Hammer 501
ROLE FOR COMPLEX NUMBERS IN ANALYTIC GEOMETRY, A, V. C. Harris 64
ROLE OF MATHEMATICS IN ASTRONOMY, The, David Layzer 434

SCIENCE AND INDUSTRY, Montgomery H. Johnson 83
SOME PARADOXES IN PLANE GEOMETRY, Albert Wilansky 292
SPACE AGE ASTRONOMERS, Francis J. Heyden 440
SYLOW THEORY, Joseph J. Malone Jr. 404

TEACHING AS A CAREER, C. Russell Phelps 138

UNDERGRADUATE RESEARCH IN MATHEMATICS AT THE NAVAL ACADEMY, J. C. Abbott . . 453
UNIQUE RESEARCH ROLE FOR MATHEMATICIANS, L. W. Tordella 477

WHEN LINES ARE POINTS, Harry Levy 325

BOOK REVIEWS

R. by means Reviewed by

Ackoff, Russell L. (ed), PROGRESS IN OPERATIONS RESEARCH, R. by J. Robertson . . 300
Ackoff, Russell L., SCIENTIFIC METHOD: OPTIMIZING APPLIED RESEARCH DECISIONS, R. by Jane I. Robertson 415
Agnew, Ralph Palmer, CALCULUS: ANALYTICAL GEOMETRY AND CALCULUS, WITH VECTORS, R. by Edwin G. Zigel, Jr. 426
Albert, A. A. (ed), STUDIES IN MODERN ALGEBRA, R. by Joseph Rotman 533
Alder, H. L. and E. B. Roessler, INTRODUCTION TO PROBABILITY AND STATISTICS, SECOND EDITION, R. by Gus Haggstrom 341
Alexander, Howard W., ELEMENTS OF MATHEMATICAL STATISTICS, R. by Joseph M. Moser 301
Altwerger, Samuel I., MODERN MATHEMATICS AN INTRODUCTION, R. by T. J. Cullen . 195
Ambrose, Alice and Morris Lazerowitz, LOGIC: THE THEORY OF FORMAL INFERENCE, R. by Gordon E. Cash 302
Atkin, R. H., CLASSICAL DYNAMICS, R. by Boris Musulin 188
Audree, R. V., INTRODUCTION TO CALCULUS WITH ANALYTIC GEOMETRY, R. by R. Freese 422

Ball, R. W., PRINCIPLES OF ABSTRACT ALGEBRA, R. by Hiram Payley 532
Benev, Vaclac E., GENERAL STOCHASTIC PROCESSES IN THE THEORY OF QUEUES, R. by Leone Y. Low 532
Birkhoff, Garrett and Gian-Carlo Rota, ORDINAL DIFFERENTIAL EQUATIONS, R. by J. D. Elder 481
Boas, R. P. Jr., A PRIMER OF REAL FUNCTIONS, CARUS MONOGRAPH, R. by D. Henney . 234
Bodewig, E., MATRIX CALCULUS, R. by Franz E. Hohn 192
Bolza, O., LECTURES ON THE CALCULUS OF VARIATIONS, R. by Franz E. Hohn 302
Boole, George, THE CALCULUS OF FINITE DIFFERENCES, FOURTH EDITION, R. by F. Hohn 238
Botts, T. A. and E. J. McShane, REAL ANALYSIS, R. by Robert G. Bartle 74
Brownlee, K. A., STATISTICAL THEORY AND METHODOLOGY IN SCIENCE AND ENGINEERING, R. by Joseph M. Moser 188
Brunk, H. D., AN INTRODUCTION TO MATHEMATICAL STATISTICS, R. by W. A. Vezeau . . 132
Buck, R. C. (ed), STUDIES IN MODERN ANALYSIS, R. by L. L. Helms 427

Cameron, Edward A., ALGEBRA AND TRIGONOMETRY, R. by Henry Frandsen 190
Cardano, Gerolamo, THE BOOK OF GAMES OF CHANCE, R. by Marc E. Low 304
Carirns, Stewart Scott, INTRODUCTORY TOPOLOGY, R. by Ky Fan 301
Cheng, David K., ANALYSIS OF LINEAR SYSTEMS, R. by S. L. Hakimi 75
Chentzov, N. M. and D. O. Shklarsky, THE USSR OLYMPIAD PROBLEM BOOK, R. by Franz E. Hohn 350
Chernoff, Herman and Lincoln E. Moses, ELEMENTARY DECISION THEORY, R. by Donald M. Roberts 75
Churchmann, C. W. and P. Ratoosh, MEASUREMENT: DEFINITION AND THEORIES, R. by Richard Kao 122
Condoyannis, G. E., SCIENTIFIC RUSSIAN, R. by Franz E. Hohn 77
Coxeter, H. S. M., INTRODUCTION TO GEOMETRY, R. by Richard L. Bishop 237
Craig, Allen T. and Robert V. Hogg, AN INTRODUCTION TO MATHEMATICAL STATISTICS, R. by W. A. Vezeau 133
Curtis, C. W. and I. Reiner, REPRESENTATION THEORY OF FINITE GROUPS, R. by John H. Walter 534

Daus, P. H. and W. M. Whyburn, INTRODUCTION TO MATHEMATICAL ANALYSIS WITH APPLICATIONS TO PROBLEMS OF ECONOMICS, R. by T. A. Yancey 24
Dennis, J. B., MATHEMATICAL PROGRAMMING AND ELECTRICAL NETWORKS, R. by W. J. Poppelbaum 124
Dorfman, Robert and Paul A. Samuelson and Robert M. Solow, LINEAR PROGRAMMING AND ECONOMIC ANALYSIS, R. by Kenneth O. May 23
Drooyan, Irving and William Wooton, INTERMEDIATE ALGEBRA, R. by Gilbert L. Sward 421

Eichner, H. and H. Hein, READING GERMAN FOR SCIENTISTS, R. by Franz E. Hohn . . 79
Elsgolc, L. E., CALCULUS OF VARIATIONS, R. by E. J. Scott 429
Epstein, Bernard, PARTIAL DIFFERENTIAL EQUATIONS, AN INTRODUCTION, R. by Robert G. Bartle 482
Evans, G. W. II and C. L. Perry, PROGRAMMING AND CODING FOR AUTOMATIC DIGITAL COMPUTERS, R. by Lloyd D. Fosdick 304
Eves, H. and C. V. Newsom, AN INTRODUCTION TO THE FOUNDATIONS AND FUNDAMENTAL CONCEPTS OF MATHEMATICS, R. by Edwin J. Purcell 22

Fano, Robert M., TRANSMISSION OF INFORMATION, R. by R. B. Ash 235
FIBONACCI QUARTERLY, THE, R. by Franz E. Hohn 484
Finkbeiner, D. T., INTRODUCTION TO MATRICES AND LINEAR TRANSFORMATIONS, R. by J. William Toole 428
Fisher, Robert C. and Allen D. Ziebur, CALCULUS AND ANALYTIC GEOMETRY, R. by Francis Regan 236
Forsythe, George E. and Wolfgang Wason, FINITE-DIFFERENCE METHODS FOR PARTIAL DIFFERENTIAL EQUATIONS, R. by Richard Jerrard 187
Fort, T., DIFFERENTIAL EQUATIONS, R. by George L. Kvitek 189
Fraser, D. A. S., STATISTICS: AN INTRODUCTION, R. by Sutton Monro 76
Friedman, A., GENERALIZED FUNCTIONS AND PARTIAL DIFFERENTIAL EQUATIONS, R. by Julius Smith 539
Friedman, Lawrence and Maurice Sasieni and Arthur Yaspan, OPERATIONS RESEARCH: METHODS AND PROBLEMS, R. by Jane Robertson 131
Frost, P., AN ELEMENTARY TREATISE ON CURVE TRACING, FIFTH EDITION, R. by F Hohn 237
Fulks, Watson, ADVANCED CALCULUS, R. by Howard L. Jackson 305

Gantmacher, F. R., APPLICATIONS OF THE THEORY OF MATRICES, R. by Herbert Wilf . 76
Gantmacher, F. R., THE THEORY OF MATRICES, R. by Paul Slepian 193
Gaskell, Robert E., ENGINEERING MATHEMATICS, R. by Robert L. Gallawa 22
Gass, Saul I., LINEAR PROGRAMMING: METHODS AND APPLICATIONS, R. by J. Robertson 74
Gillman, Leonard and Meyer Jerison, RINGS OF CONTINUOUS FUNCTIONS, R. by Robert G. Bartle 184
Glicksman, M., AN INTRODUCTION TO LINEAR PROGRAMMING AND THE THEORY OF GAMES, R. by Leone Y. Low 534
Goldberg, S. I., CURVATURE AND HOMOLOGY, R. by R. L. Bishop 419
Goldberg, Samuel, INTRODUCTION TO DIFFERENCE EQUATIONS, R. by Robert L. Davis . 25
Gonzalas, M. O. and J. D. Mancill, MODERN COLLEGE ALGEBRA, R. by Charles Koch . 191
Grabbe, E. M., and S. Ramo and D. E. Wooldridge, HANDBOOK OF AUTOMATION, COMPUTATION AND CONTROL, VOL. I, II, III 130, 132, 346
Graesser, R. F., UNDERSTANDING THE SLIDE RULE, R. by Franz E. Hohn 537
Gray, D. E., AMERICAN INSTITUTE OF PHYSICS HANDBOOK, R. by Franz E. Hohn . . . 77
Gray, James F., SETS, RELATIONS AND FUNCTIONS, R. by Franz E. Hohn 420

Haaser, N. B., INTRODUCTION TO ANALYSIS, R. by Gian-Carlo Rota 127
Hardy, G. H., RAMANUJAN, TWELVE LECTURES ON SUBJECTS SUGGESTED BY HIS LIFE AND WORK, R. by P. T. Bateman 72
Helgason, Sigurdur, DIFFERENTIAL GEOMETRY AND SYMMETRIC SPACES, R. by R. Bishop 419
Heins, M. H., SELECTED TOPICS IN THE CLASSICAL THEORY OF FUNCTIONS OF COMPLEX VARIABLE, R. by Maynard G. Arsove 345
Hille, Einar, ANALYTIC FUNCTION THEORY, VOLUME I, R. by Howard Osborn 78
Hirschman, I. I. Jr., INFINITE SERIES, R. by M. S. Klamkin 344
Hochstadt, H., SPECIAL FUNCTIONS OF MATHEMATICAL PHYSICS, R. by Herbert S. Wilf 305
Hocking, J. G. and G. S. Young, TOPOLOGY, R. by R. L. Bishop 234
Hofmann, Joseph E., CLASSICAL MATHEMATICS, A CONCISE HISTORY OF THE CLASSICAL ERA IN THE HISTORY OF MATHEMATICS, R. by Paul T. Bateman 131
Holl, D. L. and C. G. Maple and B. Vinograde, INTRODUCTION TO THE LAPLACE TRANSFORM, R. by R. P. Jerrad 77
Howard, R. A., DYNAMIC PROGRAMMING AND MARKOV PROCESSES, R. by Robert Kalaba . 193
Hunter, J. A. H. and J. S. Madachy, MATHEMATICAL DIVERSIONS, R. by Franz Hohn . 538
Hyman, Charles, GERMAN-ENGLISH MATHEMATICS DICTIONARY, R. by Franz E. Hohn . . 129

Jacobson, Nathan, LIE ALGEBRAS, R. by R. J. Crittenden 349
Jaeger, Arno, INTRODUCTION TO ANALYTIC GEOMETRY AND LINEAR ALGEBRA, R. by Boen 239
Jordan, C., CALCULUS OF FINITE DIFFERENCES, R. by Russell E. Welker 300

Kac, Mark, STATISTICAL INDEPENDENCE IN PROBABILITY, ANALYSIS AND NUMBER THEORY, R. by Z. Ciesielski 303
Kaplan, Wilfred, ORDINARY DIFFERENTIAL EQUATIONS, R. by E. J. Scott 25
Karlin, Samuel, MATHEMATICAL METHODS AND THEORY IN GAMES, PROGRAMMING AND ECONOMICS, R. by Donald M. Roberts 194
Kemeny, J. G., A. Schleifer Jr., J. L. Snell and G. L. Thompson, FINITE MATHEMATICS WITH BUSINESS APPLICATIONS, R. by Robert J. Thomas . . . 418
Klein, F., Sheppard, MacMahon and Mordell, FAMOUS PROBLEMS OF ELEMENTARY GEOMETRY, FROM DETERMINANT TO TENSOR, INTRODUCTION TO COMBINATORY ANALYSIS, FERMAT'S LAST THEORY (ONE VOLUME), R. by Franz E. Hohn . . 430
Kopal, Zdenek, NUMERICAL ANALYSIS WITH EMPHASIS ON THE APPLICATION OF NUMERICAL TECHNIQUES TO PROBLEMS OF INFINITESIMAL CALCULUS, R. by Gene Golub . 344
Korovkin, P. P., INEQUALITIES, R. by Franz E. Hohn 421
Kostovskii, A. N., GEOMETRICAL CONSTRUCTIONS USING COMPASSES ONLY, R. by Halfar 346

Kuiper, Nicholaas H., LINEAR ALGEBRA AND GEOMETRY, R. by Arno Jaeger 482
Kullback, Solomon, INFORMATION THEORY AND STATISTICS, R. by William Martin . . 73
Kulldorff, Gunnar, CONTRIBUTION TO THE THEORY OF ESTIMATION FROM GROUPED AND PARTIALLY GROUPED SAMPLES, R. by Leone Low 427
Kuratowski, Kazimierz, INTRODUCTION TO CALCULUS, R. by Frans M. Djorup 420
Kuratowski, K., AN INTRODUCTION TO SET THEORY AND TOPOLOGY, R. by D. A. Moran 428

Landau, E., GRUNDLAGEN DER ANALYSIS, R. by Franz E. Hohn 127
Lang, Serge, DIOPHANTINE GEOMETRY, R. by Paul T. Bateman 428
Lange, Serge, AN INTRODUCTION TO DIFFERENTIABLE MANIFOLDS, R. by R. Bishop . . 419
Langman, Harry, PLAY MATHEMATICS, R. by Franz E. Hohn 481
LaSalle, Joseph and Solomon Lefschetz, STABILITY BY LIAPUNOV'S DIRECT METHOD, WITH APPLICATIONS, R. by Stephen J. Kahne 348
Lefschetz, Solomon, DIFFERENTIAL EQUATIONS: GEOMETRIC THEORY, SECOND EDITION, R. by Franz E. Hohn 538
Levens, A. S., NOMOGRAPHY, SECOND EDITION, R. by F. M. Woodworth 125
Levi, H., ELEMENTS OF ALGEBRA, FOURTH EDITION, R. by George Kvitek 480
Lieber, L. R. and H. G., LATTICE THEORY, R. by Franz E. Hohn 125

Martin, W. T. and E. Reissner, ELEMENTARY DIFFERENTIAL EQUATIONS, R. by Kvitek 302
May, Kenneth O. and Seymour Schuster, UNDERGRADUATE RESEARCH IN MATHEMATICS, R. by Hiram Paley 341
McCarthy, Philip J., INTRODUCTION TO STATISTICAL REASONING, R. by Frank Wolf . 21
McCoy, Neal H., INTRODUCTION TO MODERN ALGEBRA, R. by James R. Boen 190
McCuskey, S. W., INTRODUCTION TO ADVANCED DYNAMICS, R. by Murray S. Klamkin . 26
Miller, Kenneth S., ENGINEERING MATHEMATICS, R. by Lawrence A. Weller 21
Moran, P. A. P., THE THEORY OF STORAGE, R. by Franz E. Hohn 124
Murphy, George M., ORDINARY DIFFERENTIAL EQUATIONS AND THEIR SOLUTIONS, R. by Franz E. Hohn 187

Nidditch, P. H., RUSSIAN READER IN PURE APPLIED MATHEMATICS, R. by Franz Hohn 351
Niven, Ivan, CALCULUS, AN INTRODUCTORY APPROACH, R. by R. L. Bishop 236
Niven, Ivan, DIOPHANTINE APPROXIMATIONS, R. by Paul T. Bateman 483
Niven, I. and H. S. Zuckerman, AN INTRODUCTION TO THE THEORY OF NUMBERS, R. by Paul T. Bateman 308

Olmstead, John M. H., REAL VARIABLES, AN INTRODUCTION TO THE THEORY OF FUNCTIONS, R. by Rothwell Stephens 191
Ostrowski, A. M., SOLUTIONS OF EQUATIONS AND SYSTEMS OF EQUATIONS, R. by R. L. Bishop 238
Owen, D. B., HANDBOOK OF STATISTICAL TABLES 347

Paige, J. and J. D. Swift, ELEMENTS OF LINEAR ALGEBRA, R. by John P. Daly . . 240
Parratt, L. G., PROBABILITY AND EXPERIMENTAL ERRORS IN SCIENCE, R. by P. Axel 303
Peterson, W. W., ERROR-CORRECTING CODES, R. by Clinton R. Foulk 306
Polya, George, MATHEMATICAL DISCOVERY, R. by L. H. Swinford 424
Pontryagin, L. S., ORDINARY DIFFERENTIAL EQUATIONS, R. by E. J. Scott 425

Rainville, Earl D., SPECIAL FUNCTIONS, R. by H. O. Pollak 186
Ralston, Anthony and Herbert S. Wilf (eds), MATHEMATICAL METHODS FOR DIGITAL COMPUTERS, R. by A. S. Householder 128
Randolph, John F., CALCULUS AND ANALYTIC GEOMETRY, R. by John S. Cross 306
Ransom, William R., ALGEBRA CAN BE FUN!, R. by Franz E. Hohn 123
Reiffen, B. and J. M. Wozencraft, SEQUENTIAL DECODING, R. by Peter G. Neumann 235
Richart, Charles E., GENERAL THEORY OF BANACH ALGEBRAS, R. by Robert G. Bartle 184
Rose, Israel H., A MODERN INTRODUCTION TO COLLEGE MATHEMATICS, R. by T. Cullen 186
Rudin, Walter, FOURIER ANALYSIS ON GROUPS, R. by Neal J. Rothman 424

Sagan, Hans, BOUNDARY AND EIGENVALUE PROBLEMS IN MATHEMATICAL PHYSICS, R. by E. J. Scott 309
Samuel, Pierre and Oscar Zariski, COMMUTATIVE ALGEBRA, R. by Lawrence Levy . . 185
Schaaf, William L., BASIC CONCEPTS OF ELEMENTARY MATHEMATICS, R. by T. Cullen 192
Scheffe, Henry, THE ANALYSIS OF VARIANCE, R. by Horace W. Norton 134
Scheid, Francis J., ELEMENTS OF FINITE MATHEMATICS, R. by L. A. Weller 480
Schwartz, Abraham, ANALYTIC GEOMETRY AND CALCULUS, R. by D. Felinsky 239
Seidenberg, A., LECTURES IN PROJECTIVE GEOMETRY, R. by D. A. Moran 351
Sokolnikoff, J. S., MATHEMATICS OF PHYSICS AND MODERN ENGINEERING, R. by John D. Elder 23

Sominskii, I. S., THE METHOD OF MATHEMATICAL INDUCTION, R. by Franz E. Hohn . 351
STANDARD MATHEMATICAL TABLES, C. R. C., TWELFTH EDITION, R. by Franz Hohn . . 430
Stoll, Robert R., SETS, LOGIC AND AXIOMATIC THEORIES, R. by M. K. Yntema . . 535
Suppes, Patrick, AXIOMATIC SET THEORY, R. by M. K. Fort, Jr. 126

Takacs, L., STOCHASTIC PROCESSES, R. by Donald M. Roberts 239
Thomas, Tracy Y., CONCEPTS OF TENSOR ANALYSIS AND DIFFERENTIAL GEOMETRY,
R. by Harry Levy 350
Todd, John (ed), A SURVEY OF NUMERICAL ANALYSIS, R. by Beverly M. Toole . . . 422
Tucker, Howard G., AN INTRODUCTION TO PROBABILITY AND STATISTICS,
R. by Gus Haggstrom 347

Uspenskii, V. A., SOME APPLICATIONS OF MECHANICS TO MATHEMATICS,
R. by Lawrence A. Weller 426

Vajda, S., MATHEMATICAL PROGRAMMING, R. by R. Kalaba 353
Varga, R. S., MATRIX ITERATIVE ANALYSIS, R. by Lloyd D. Fosdick 536
Vekua, I. N., GENERALIZED ANALYTIC FUNCTIONS, R. by Maurice Heins 537
Vorob'ev, N. N., FIBONACCI NUMBERS, R. by Franz E. Hohn 418

Weinberg, G. H., STATISTICS, AN INTUITIVE APPROACH, R. by Gus Haggstrom . . . 415
Weiss, M., HIGHER ALGEBRA FOR THE UNDERGRADUATE, SECOND EDITION,
R. by T. J. Cullen 354
Wiener, Norbert, CYBERNETICS, SECOND EDITION, R. by Amich Feinstein 307
Wilf, Herbert S., MATHEMATICS FOR THE PHYSICAL SCIENCES, R. by Richard Jerrard 423
Wilks, S. S., MATHEMATICAL STATISTICS, R. by Howard W. Alexander 352
Witten, L. (et all), GRAVITATION: AN INTRODUCTION TO CURRENT RESEARCH,
R. by Ray G. Langebartel 533
Whitesitt, J. Eldon, BOOLEAN ALGEBRA AND ITS APPLICATIONS, R. by C. Pottle . 240
Whitney, D. Ransom, ELEMENTS OF MATHEMATICAL STATISTICS, R. by W. A. Vezeau . 133

BACK ISSUES AVAILABLE ! !

VOL. 1, NOS. 1 - 10 (COMPLETE) + Index
VOL. 2, NOS. 1 - 9 (No 10 NOT AVAILABLE) + Index

PRICE: fifty cents (50¢) each issue

SEND REQUESTS PRE-PAID TO:

Pi Mu Epsilon Journal
Department of Mathematics
The University of Oklahoma
Norman, Oklahoma 73069

NATIONAL FRATERNITY AFFAIRS

(For individual Chapter newsletters and new initiates see the last two sections of each issue of the JOURNAL.)

Announcement of the 1960 National Meeting of Pi Mu Epsilon 90
1960 National Meeting of Pi Mu Epsilon 151
1961 National Meeting of Pi Mu Epsilon 259
History of the Pi Mu Epsilon Fraternity 511
Cyrus Colton MacDuffee 213
Prize Money and Scholarships for your Chapter 152

PROBLEMS

ALL CONTRIBUTORS!

NOTE: Each problem proposed in the JOURNAL is assigned a number. To find the solution to a specific proposed problem, look in later JOURNALS (generally 2 issues later) under SOLUTIONS for that problem's number.

Berman, Paul 118

Block, Daniel 70

Bongiovanni, Frank . . . 530

Carlitz, L. 230
232, 296, 338, 475

Eisenstein, Maurice . . . 69

Ferguson, John E. . . . 474

Frame, J. S. 17

Furstenberg, Harry . . . 180

Gerber, Leon 297

Goldberg, Michael 69
231, 294, 473, 476

Horner, James M. 233

Hull, T. E. 231

Jungreis, Theodore . . . 297

Kaye, H. 71
119, 180, 299

Klamkin, M. S. 18, 69
71, 119, 120, 181, 231
294, 337, 410, 473, 529

Kloss, Kenneth 471

Kravitz, David L. . . . 528

LeVeque, William J. . . 471

Miksa, Francis L. . . . 17

Mitchell, R. H. G. . . . 230

Moser, Leo 17
69, 71, 119, 120
231, 294, 337, 410

Myers, Paul 18

Newman, D. J. 17
18, 71, 294
295, 409, 472

Olds, C. D. 19

Padnos, Norman 18, 19

Pascaul, Michael J. 69
70, 71

Piza, Pedro A. . . . 294, 472

Robinson, Robin 230
414

Rose, Charles S. 475

Rudis, Robert P. 120

Sandowsky, Daniel. 233

Schillo, Paul 528

Selfridge, John 118
409, 413, 473

Sheep, Lawrence 18, 71

Silberman, David L. 294

Silver, Jack 71

Silverman, David L. 337
339, 528, 529

Singer, J. T. 119

Spitznagel, Edward L. Jr. . 531

Trigg, C. W. 119
121, 182, 337, 530

Wagner, M. 70, 181

Wheeling, R. F. 230

Yearout, Paul 70

Zetto, F. 183, 339